

Listing of Claims

1-29. (canceled)

30. (currently amended): A method for signal reconstruction comprising: receiving an input waveform; including a frequency modulated carrier waveform; and frequency modulated carrier frequency, said input waveform comprising sample points; demodulating the frequency modulated carrier waveform to obtain a speed variation function; integrating the speed variation function to obtain a ~~the~~ time delay corresponding to at least one ~~given~~ sample point of the input waveform; wherein if a time delay exists, the sample point is irregular and if a time delay does not exist, the sample point is regular; in the case of irregular samples of the input waveform, interpolating between ~~the~~ irregular samples points of the input waveform, and not interpolating between regular sample points of the input waveform, thereby establishing a set of output sample pointss at a regular interval.

31. (original): The method of claim 30 comprising providing bandpass filtration for the frequency modulated carrier waveform.

32. (canceled)

33. (original): The method of claim 30 comprising demodulating the frequency modulated carrier waveform to obtain a speed variation function, said demodulation performed using hardware.

34. (currently amended): The method of claim 30 comprising demodulating the frequency modulated carrier waveform to obtain a speed variation function, said demodulation performed using ~~either~~ software.

35. (original): The method of claim 30 comprising providing lowpass filtration of an output of the speed variation function.

36. (original): The method of claim 30, comprising the interpolating between the irregular samples performed in accordance with the time delay, thereby establishing a set of output samples at the regular interval corresponding to a to a desired sampling rate.

37-40. (canceled)

41. (currently amended): A method of providing an improved audio reproduction derived from an analog recording, the method comprising:

providing a digitized wideband playback signal derived from a recording containing wow/flutter;

deriving, without use of a prescribed tone or code intended to be indicative of timing, a reference signal from the digitized wideband playback signal, the reference signal being synchronized with the wideband playback signal;

generating a modulated carrier by stabilizing and idealizing the reference signal;

deducing periodic deviations between the modulated carrier and a high-precision clock signal;
and

adjusting timing and pitch in the digitized wideband playback signal in response to the deduced periodic deviations, wherein such adjusting comprises establishing a limit in a change in a period of the reference signal, and if the change in the period exceeds the limit, separately conforming the synchronization of the digitized wideband playback signal to the stabilized carrier at a time of the recording which occurs after the change, thereby separately adjusting the synchronization before and after the change, thereby producing a wideband playback signal substantially corrected for distortion corresponding to said wow/flutter.

42. (previously presented): The method of claim 41, wherein the reference signal is generated by identifying a reference sound entity which can be derived from the wideband analog playback signal; and wherein the modulated carrier is generated from a known or preestablished pattern within the reference sound element.

43. (previously presented): The method of claim 41, further comprising: determining a set of data reflecting the instantaneous deviation between a nominal intermediate frequency and the reference signal; and generating a modulated carrier that reflects the deviations so determined.

44. (canceled)

45. (currently amended): A method of providing an improved audio reproduction derived from an analog recording, the method comprising:

providing an analog playback signal derived from an analog recording having wow/flutter;

generating a digitized wideband playback signal from the analog playback signal;

deriving a reference signal corresponding to a bias signal from either the analog playback signal or digitized wideband playback signal, the reference signal being synchronous with the wideband playback signal;

generating a carrier by stabilizing and idealizing the reference signal;

deducing periodic deviations between the carrier and a high-precision clock signal; and

adjusting timing and pitch in the digitized wideband playback signal in response to the deduced periodic deviations, wherein such adjusting comprises establishing a limit in a change in a period of the signal corresponding to the reference signal, and if the change in the period exceeds the limit, separately conforming the synchronization of the wideband playback signal in digital form to the stabilized signal corresponding to the reference signal at a time of the digital recording which occurs after the change, thereby separately adjusting the synchronization before and after the change, thereby producing a wideband playback signal substantially corrected for distortion corresponding to said wow/flutter.

46. (previously presented): The method of claim 45, wherein the reference signal is derived from a bias signal present in the wideband analog playback signal, and further comprising:

establishing a limit in a change in a period of the reference signal corresponding to the bias signal, and if the change in the period exceeds the limit, separately conforming the synchronization of the digitized wideband playback signal to the carrier corresponding to the bias signal at a time of the digital recording which occurs after the change, thereby separately adjusting the synchronization before and after the change.

47. (previously presented): The method of claim 45, further comprising:

extracting a reference sound element which can be derived from the wideband analog playback signal; determining a deviation between the high-precision clock signal and a pre-established sound pattern for the reference sound element; and

adjusting sound frequencies in the digital domain in accordance with the deviation.

48. (previously presented): The method of claim 45, further comprising:

extracting an existing carrier which can be derived from the wideband analog playback signal;

determining a deviation between a high-precision clock signal and a corresponding representation of the carrier within the wideband analog playback signal; and

adjusting the wideband playback signal in a digital format according to the deviation.

49. (canceled).

50. (canceled).

51. (previously presented): An electronically readable storage medium containing data representing digital audio information which has been generated by the method of claim 41.

52. (previously presented): The electronically readable storage medium of claim 51, wherein the medium is an optical disk, a memory card, or a digital audio tape cassette.

53. (previously presented): The electronically readable storage medium of claim 52, further comprising packaging displaying artwork and text which identifies the source of the digital audio information, and includes a statement to the effect that the original recording has been digitally remastered or digitally enhanced.